In the Claims

Amendments to the Claims:

1. (currently amended) A die, comprising:

a substrate; and

two or more different types of pillar structures formed over the substrate in a pattern; at least one of the two or more different types of pillar structures includes a lower high-melting-point non-solder ~~supporting~~ portion and an upper solder material portion over and in substantial contact with only an upper surface of the lower high-melting point non-solder ~~supporting~~ portion; and only a lead-free metal portion interposed between the substrate and the at least one pillar structure interposed between the substrate and the at least one pillar structure; wherein the lower high-melting-point non-solder ~~supporting~~ portion does not melt during a reflow process to form the two or more different types of pillar structures.

2. (previously presented) The die of claim 1, wherein at least one of the two or more different types of pillar structures has a rectangular shape, a round shape, a ring shape, a wall-like shape or a spline shape.

3. (previously presented) The die of claim 1, wherein at least one of the two or more different types of pillar structures has a rectangular shape with a length of from about 789.0 to 1289.0 μm and a width of about 289.0 μm.

4. (previously presented) The die of claim 1, wherein at least one of the two or more different types of pillar structures has a rectangular shape with a length of about 789.0 μm and a width of about 289.0 μm.

5. (previously presented) The die of claim 1, wherein at least one of the two or more different types of pillar structures has a rectangular shape with a length of about 1289.0 μm and a width of about 289.0 μm.

6. (previously amended) The die of claim 1, wherein at least one of the two or more different types of pillar structures has a rectangular shape and the two or more different types of pillar structures are spaced apart lengthwise by about 500.0 μm center-to-center and by about 211.0 μm end-to-end.

7. (previously amended) The die of claim 1, wherein at least one of the two or more different types of pillar structures has a round shape with a diameter of about 289.0 μm.

8. (previously amended) The die of claim 1, wherein at least one of the two or more different types of pillar structures has a round shape with a diameter of about 289.0 μm; the two or more different types of pillar structures being arranged at least in part in rows and columns with the adjacent round pillar structures being spaced apart by about 500.0 μm.

9. (original) The die of claim 1, wherein the pillar structure pattern includes a series of rows and columns.

10. (previously presented) The die of claim 1, wherein the pillar structure pattern includes a series of rows and columns; the pillar structures arranged in the series of rows and columns are spaced apart lengthwise by about 500.0 μm center-to-center in the columns and are spaced apart about 211.0 μm end-to-end.

11. (previously amended) The die of claim 1, wherein at least one of the two or more different types of pillar structures includes at least one wall-shaped pillar structure.

12. (previously amended) The die of claim 1, wherein at least one of the two or more different types of pillar structures includes at least one wall-shaped pillar structure forming a square.

13. (original) The die of claim 1, including a pillar wall.

14. (canceled)

15. (canceled)

16. (currently amended) The die of claim 1, wherein the lower high-melting-point non-solder ~~supporting~~ portion is comprised of copper coated with oxide, chromium or nickel.

17. (canceled)

18. (canceled)

19. (previously presented) The die of claim 1, wherein the upper solder material portion is comprised of:

from about 60 to 70% tin and from about 30 to 40% lead;

about 63% tin and 37% lead;

about 99% tin and SnAg; or

100%tin.

20. (previously presented) The die of claim 1, wherein the solder material portion is comprised of:

about 63% tin and 37% lead; or

100%tin.

21. (previously amended) The die of claim 1, wherein the pillar structures each have a total height of from about 60 to 150 μm.

22. (previously amended) The die of claim 1, wherein the pillar structures each have a total height of about 100 μm.

23. (original) The die of claim 1, wherein the die is used in Surface Acoustic Wave devices and in MEM devices.

24. (currently amended) A die, comprising:

a substrate; and

two or more different types of pillar structures formed over the substrate in a pattern; the two or more different types of pillar structures having a rectangular shape, a round shape, a ring shape, a wall-like shape or a spline shape; at least one of the two or more different types of pillar structures includes a lower high-

melting-point non-solder ~~supporting~~ portion and an upper solder material portion over and in substantial contact with only an upper surface of the lower high-melting point non-solder ~~supporting~~ portion; and only a lead-free metal portion interposed between the substrate and the at least one pillar structure; wherein the lower high-melting-point non-solder ~~supporting~~ portion does not melt during a reflow process to form the two or more different types of pillar structures.

25. (previously amended) The die of claim 24, wherein at least one of the two or more different types of pillar structures has a rectangular shape with a length of from about 789.0 to 1289.0 μm and a width of about 289.0 μm.

26. (previously amended) The die of claim 24, wherein at least one of the two or more different types of pillar structures has a rectangular shape with a length of about 789.0 μm and a width of about 289.0 μm.

27. (previously amended) The die of claim 24, wherein at least one of the two or more different types of pillar structures has a rectangular shape with a length of about 1289.0 μm and a width of about 289.0 μm.

28. (previously amended) The die of claim 24, wherein at least one of the two or more different types of pillar structures has a rectangular shape and the two or

more different types of pillar structures are spaced apart lengthwise by about 500.0 μm center-to-center and by about 211.0 μm end-to-end.

29. (previously amended) The die of claim 24, wherein at least one of the two or more different types of pillar structures has a round shape with a diameter of about 289.0 μm.

30. (previously amended) The die of claim 24, wherein at least one of the two or more different types of pillar structures has a round shape with a diameter of about 289.0 μm; the two or more different types of pillar structures being arranged at least in part in rows and columns with the adjacent round pillar structures being spaced apart by about 500.0 μm.

31. (original) The die of claim 24, wherein the pillar structure pattern includes a series of rows and columns.

32. (previously presented) The die of claim 24, wherein the pillar structure pattern includes a series of rows and columns; the pillar structures arranged in the series of rows and columns are spaced apart lengthwise by about 500.0 μm center-to-center in the columns and are spaced apart about 211.0 μm end-to-end.

33. (previously amended) The die of claim 24, wherein the two or more different types of pillar structures include at least one wall-shaped pillar structure.

34. (previously amended) The die of claim 24, wherein the two or more different types of pillar structures include at least one wall-shaped pillar structure forming a square.

35. (original) The die of claim 24, including a pillar wall.

36. (canceled)

37. (canceled)

38. (currently amended) The die of claim 24, wherein the lower high-melting-point non-solder ~~supporting~~ portion is comprised of copper coated with oxide, chromium or nickel.

39. (canceled)

40. (canceled)

41. (previously presented) The die of claim 24, wherein the upper solder material portion is comprised of:

from about 60 to 70% tin and from about 30 to 40% lead;

about 63% tin and 37% lead;

about 99% tin and SnAg; or

100%tin.

42. (previously presented) The die of claim 24, wherein the upper solder material portion is comprised of:

about 63% tin and 37% lead; or

100%tin.

43. (previously amended) The die of claim 24, wherein the pillar structures each have a total height of from about 60 to 150 μm.

44. (previously amended) The die of claim 24, wherein the pillar structures each have a total height of about 100 μm.

45. (original) The die of claim 24, wherein the die is used in Surface Acoustic Wave devices and in MEM devices.

46. (currently amended) A method of forming a die, comprising the steps:

providing a substrate; and

forming two or more different types of pillar structures over the substrate in a pattern; at least one of the two or more different types of pillar structures includes a lower high-melting-point non-solder ~~supporting~~ portion and an upper solder material portion over and in substantial contact with only an upper surface of the lower high-melting point non-solder ~~supporting~~ portion; and only a lead-free metal portion interposed between the substrate and the at least one pillar structure; wherein the lower high-melting-point non-solder ~~supporting~~ portion does not melt during a reflow process to form the two or more different types of pillar structures.

47. (previously amended) The method of claim 46, wherein at least one of the two or more different types of pillar structures has a rectangular shape, a round shape, a ring shape, a wall-like shape or a spline shape.

48. (previously amended) The method of claim 46, wherein at least one of the two or more different types of pillar structures has a rectangular shape with a length of from about 789.0 to 1289.0 μm and a width of about 289.0 μm.

49. (previously amended) The method of claim 46, wherein at least one of the two or more different types of pillar structures has a rectangular shape with a length of about 789.0 μm and a width of about 289.0 μm.

50. (previously amended) The method of claim 46, wherein at least one of the two or more different types of pillar structures has a rectangular shape with a length of about 1289.0 μm and a width of about 289.0 μm.

51. (previously amended) The method of claim 46, wherein at least one of the two or more different types of pillar structures has a rectangular shape and the two or more different types of pillar structures are spaced apart lengthwise by about 500.0 μm center-to-center and by about 211.0 μm end-to-end.

52. (previously amended) The method of claim 46, wherein at least one of the two or more different types of pillar structures has a round shape with a diameter of about 289.0 μm.

53. (previously amended) The method of claim 46, wherein at least one of the two or more different types of pillar structures has a round shape with a diameter of about 289.0 μm; the two or more different types of pillar structures being arranged at least

in part in rows and columns with the adjacent round pillar structures being spaced apart by about 500.0 μm.

54. (original) The method of claim 46, wherein the pillar structure pattern includes a series of rows and columns.

55. (previously presented) The method of claim 46, wherein the pillar structure pattern includes a series of rows and columns; the pillar structures arranged in the series of rows and columns are spaced apart lengthwise by about 500.0 μm center-to-center in the columns and are spaced apart about 211.0 μm end-to-end.

56. (previously amended) The method of claim 46, wherein at least one of the two or more different types of pillar structures includes at least one wall-shaped pillar structure.

57. (previously amended) The method of claim 46, wherein at least one of the two or more different types of pillar structures includes at least one wall-shaped pillar structure forming a square.

58. (original) The method of claim 46, including a pillar wall.

59. (canceled)

60. (canceled)

61. (currently amended) The method of claim 46, wherein the lower high-melting-point non-solder ~~supporting~~ portion is comprised of copper coated with oxide, chromium or nickel.

62. (canceled)

63. (canceled)

64. (previously presented) The method of claim 46, wherein the upper solder material portion is comprised of:

from about 60 to 70% tin and from about 30 to 40% lead;

about 63% tin and 37% lead;

about 99% tin and SnAg; or

100%tin.

65. (previously presented) The method of claim 46, wherein the upper solder material portion is comprised of:

about 63% tin and 37% lead; or

100% tin.

66. (previously amended) The method of claim 46, wherein the pillar structures each have a total height of from about 60 to 150 μm.

67. (previously amended) The method of claim 46, wherein the pillar structures each have a total height of about 100 μm.

68. (original) The method of claim 46, wherein the die formed is used in Surface Acoustic Wave devices and in MEM devices.

69. (currently amended) The method of claim 1, wherein the lower high-melting-point non-solder ~~supporting~~ portion is comprised of copper.

70. (currently amended) The method of claim 24, wherein the lower high-melting-point non-solder ~~supporting~~ portion is comprised of copper.

71. (currently amended) The method of claim 46, wherein the lower high-melting-point non-solder ~~supporting~~ portion is comprised of copper.